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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Holger Klapproth

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BIOTECH BEACH LAW GROUP, PC
5677 OBERLIN DRIVE, SUITE 204
SAN DIEGO, CA 92121

EXAMINER

YU, MELANIE J

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,817	Applicant(s) KLAPPROTH, HOLGER	
	Examiner MELANIE YU	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 79-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 79-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments filed 2 February 2010 has been considered and entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 79, 80 and 82 are rejected under 35 U.S.C. 102(e) as being anticipated by Cohen et al. (US 2003/0207258) in view of Pomato et al. (US 5,965,106) further in view of Clapper (US 5,744,515) and in light of Kamb et al. (US 2003/0027214).

Cohen et al. teach a blocking reagent and at least one photoreactive group (crosslinking reagent has a reactive group that attaches to a blocking material, par. 32; substrate has immobilized reactive group is photoreactive, pars. 30 and 52; blocking reagent is attached to crosslinking reagent after activation of the photoreactive group, par. 52). Cohen et al. teach a photo-reactive crosslinking agent of SANPAH, but do not specifically teach that the attachment between the substrate and the photoactive agent

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is covalent. However, Kamb et al. teach a covalent bond formed between a photoreactive SANPAH and a substrate when SANPAH is photoactivated (par. 115). Cohen et al. fail to teach the blocking reagent having the photoreactive group for covalent immobilization on a surface and the photoreactive group being benzophenone.

Pomato et al. teach a photoreactive benzophenone being advantageous over a photoreactive group of arylazide reagents (col. 14, lines 37-40), wherein SANPAH is an arylazide reagent (col. 17, lines 47-61), in order to provide an in vivo delivery system that is easily synthesized and purified and high yields.

Clapper teaches a molecule having a photoreactive group (molecule derivatized with photoreactive group, col. 13, lines 16-20), wherein the photoreactive group is benzophenone (col. 11, lines 40-61) and activating the photoreactive group to covalently immobilize the molecule to a substrate (proteins are illuminated to activate the photoreactive group to produce covalent immobilization to the substrate, col. 13, lines 22-24), in order to provide covalently immobilization of the molecule to the substrate.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include as the photoreactive group of Cohen et al. in light of Kamb et al., benzophenone instead of SANPAH which is an arylazide reagent as taught by Pomato et al., in order to provide a higher crosslinking yield. It would have further been obvious to one having ordinary skill in the art at the time the invention was made to include on the blocking reagent, instead of on the substrate of Cohen et al. in view of Pomato et al. and in light of Kamb et al., a photoreactive group for covalent

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immobilization on a surface as taught by Clapper, in order to provide immobilized molecules that are covalently bonded to a substrate and have effective activity after immobilization.

Cohen et al. teach the blocking reagent being bovine serum albumin or a surfactant (par. 39).

2. Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. (US 2003/0207258) in view of Pomato et al. (US 5,965,106) further in view of Clapper (US 5,744,515) and in light of Kamb et al. (US 2003/0027214), as applied to claim 80, further in view of Caldwell et al. (US 5,516,703).

Cohen et al. in view of Pomato et al. further in view of Clapper and in light of Kamb et al. teach a pluronic surfactant blocking reagent (Cohen, par. 39), but fail to teach the surfactant specifically being PLURONIC F-68.

Caldwell et al. teach modified pluronic surfactants immobilized to a substrate (col. 9, lines 18-47), wherein the pluronic surfactant is Pluronic F-68 (col. 10, lines 21-40), in order to provide a surface with minimum non-specific binding (col. 3, lines 43-51).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include as the pluronic blocking reagent of Cohen et al. in view of Pomato et al. further in view of Clapper and in light of Kamb et al., a surfactant that is Pluronic F-68 as taught by Caldwell et al. because Cohen et al. is generic with respect to the type of Pluronic surfactant that can be incorporated into the

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assay device and one would be motivated to use a specific type of Pluronic surfactant based on the economics and availability of reagents.

Response to Arguments

1. Applicant's arguments filed 2 February 2010 have been fully considered but they are not persuasive.

At pages 5-8, applicant argues that Clapper does not teach covalent immobilization of a blocking reagent on a sensor substrate using a photoreactive group, but instead teaches crosslinking of adhesion molecules using a photoreactive group and the physical entrapment of the cross-linked adhesion molecules within pores of a porous substrate. Applicant cites columns 8, 9, 13 and 14 to demonstrate that the adhesion molecules are immobilized by crosslinking and then physical entrapment in the pores.

Applicant's argument is not persuasive because at column 13, lines 22-24, Clapper recites "The proteins were illuminated to activate the photoactivatable latent reactive groups and produce covalent immobilization to the ePTFE device", which indicates that the reactive groups are attached directly to the substrate through covalent immobilization. Additionally, at column 6, lines 3-5, Clapper recites "...the adhesion molecules are covalently **immobilized to the surface, including the pore surfaces, of the implant** by means of photochemistry." (emphasis added). This passage indicates that the photoactivatable reactive groups described in the photochemistry process at column 13, lines 15-24 covalently immobilizes the proteins directly to the surface not just to each other, as argued by applicant.

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At pages 8 and 9, applicant argues that one skilled in the art would not look to the immobilization technique described in Clapper for use with Cohen et al. since central to Clapper is the use of a highly porous substrate with areas of high concentration of adhesion molecules to attract cells into pores, whereas central to Cohen et al. is the uniform covering of molecules across the entire substrate.

Applicant's argument is not persuasive because Clapper is relied upon only for teaching the photoreactive group providing covalent immobilization to a substrate. The pattern in which the groups are immobilized is not relevant to the rejection. Additionally, one having ordinary skill in the art would not expect the different pattern or concentration of photoreactive groups to affect the behavior or the type of bond created, and therefore would not have been dissuaded from looking to Clapper to modify Cohen et al.

At pages 9-11, applicant argues that a different technical approach is provided in the present application in comparison to Cohen et al., which does not require photo-masking.

Applicant's argument is not persuasive because the rejected claim is drawn to a product and applicant's arguments are directed to Cohen et al. teaching a method of making the product that is different from the claimed invention. However, since the claims are drawn to the product, the prior art must only teach the required structural limitations. A different method of making the product may be performed by the prior art so long as the final products are the same. As stated in the rejection above, the final product of the prior art references teach the structural limitations required by the claims,

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and therefore reads on the instant claims. Furthermore, the claim does not exclude a product made by the cross-linking and photo-masking method taught by Cohen et al.

At pages 11-12, applicant argues that Caldwell does not remedy the previously argued deficiencies of claim 79.

Applicant's argument is not persuasive because Caldwell is not relied upon for teaching the previously argued limitations, and all arguments against the cited references have been addressed above.

Conclusion

2. No claims are allowed.

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELANIE YU whose telephone number is (571)272-2933. The examiner can normally be reached on M-F 8:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571) 272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Melanie Yu/
Primary Examiner, Art Unit 1641